

# THREATENED & ENDANGERED

# SPECIES

## Creatures of the Dark

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Imagine living where one is always surrounded by an absolute, thick, black darkness, a place where the sun never shines and never will. How would you find food and shelter, attract a mate, and avoid being eaten? These living conditions are normal for the many species of animals that inhabit the caves of Alabama. In this world are spiders, beetles, pseudoscorpions, fish, and other animals that have adapted to life underground, and in fact are incapable of surviving in what we know as typical surroundings. These species occupy the open underground spaces of karst, a type of landscape in which there is a layer of soluble rock, such as limestone, and as the rock dissolves internal drainage patterns develop. The common features of karst are caves, sinkholes, and springs. Karst landscape is widespread throughout northern Alabama, but there are also karst regions in the other areas of the state.

A dramatic difference between the above-ground and below-ground worlds is that there is much less food available in caves. Consider that underground there is no sunlight, thus no green plants to capture the energy from the sun. For example, a square foot of habitat in a typical cave receives 2,000 times less energy than if it were on the surface. So most, if not all, of the energy that is found in caves comes from above. Leaf litter, humus, logs, twigs, and wayward animals from the forests above falling or being washed into sinkholes are one way that energy is brought into caves. Another method is from animals, such as bats and crickets, that feed outside of caves, reenter the cave, and leave droppings.

Cave ecosystems are quite sensitive and are very vulnerable to impacts such



*Southern cavefish (Typhlichthys subterraneus), a relatively common species in aquatic caves of north Alabama.*



*Cave crayfish, often found in caves with southern cavefish.*

as pollutants, industrial waste, municipal sewage, hazardous chemical spills, runoff from polluted surface areas, overuse of groundwater, and introduced species such as fire ants. The history of using sinkholes as trash dumps has been very detrimental to many caves.

Cave life is categorized by the degree with which the various species use caves, and whether the species is aquatic or terrestrial. Animals that normally live outside of caves but occasionally enter them are termed "accidentals." These species cannot live within the cave environment for any appreciable length of

time. Examples here would be raccoons, box turtles, and humans.

Trogloxenes spend a large portion of time in caves but must leave them in order to feed. Bats, woodrats, and cave crickets are good examples of this type of cave life. Gray bats and Indiana bats are two rare bats that are found in some caves in the state. Both of these species are listed as endangered by the U.S. Fish and Wildlife Service.

The most extremely adapted, and interesting group, includes troglobites and stygobites. Troglobitic animals are terrestrial and must live in caves throughout their life. Stygobitic animals are aquatic obligate cave dwellers. Stygobitic and troglobitic species are typically eyeless, have no coloration, lay fewer but larger eggs, and have extended life spans. For example, cave crayfish are thought to live for about 40 years. Other senses have become more developed to accommodate for the loss of vision. Examples of these species are southern cavefish, cave crayfish, the Cave Spring cave spider, and numerous insects. Two of the stygobites that have been listed as endangered by the US Fish and Wildlife Service are the Alabama cavefish and Alabama cave shrimp. Other species are currently being studied to learn more about their habits, life histories, and status.

Alabama is rich in caves—approximately 3,500 are known—as well as having many springs and sinkholes, and has a correspondingly rich level of cave biodiversity. In fact, Jackson County has more species of obligate cave dwellers than any other county in the United States. The next time that you're walking the woods, look down and think about the life that may be deep below your feet. ♣